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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,742	03/22/2004	Daniel A. Goodman	MYKR1310	9587

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EXAMINER	
BONANTO, GEORGE P	

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/805,742	GOODMAN, DANIEL A.	
	Examiner	Art Unit	
	George P. Bonanto	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: a description of reference numeral 80, shown in Fig. 4, is missing in the specification. Appropriate correction is required.

The disclosure is objected to because of the following informalities: page 24 includes a large blank space. The space should be deleted. Appropriate correction is required.

Claim Objections

Claims 9 and 17 are objected to because of the following informalities: claims 9 and 17 contain the claim element "parini gauge." The claim element "parini gauge" should be deleted and the claim element "pirani gauge" should be inserted in its place. Appropriate correction is required.

Claim 15 is objected to because of the following informalities: claim 15 contains the phrase, "convert the digital valve control signal to an analog valve control signal." The claim element "digital valve control signal" lacks antecedent basis. Appropriate correction is required.

Claim 16 is objected to because of the following informalities: claim 16 contains the phrase, " wherein the software instructions are further comprise." The word "are" should be deleted. Appropriate correction is required.

Claim 18 is objected to because of the following informalities: claim 18 contains the phrase, "storing computer executable by the processor." The phrase should be deleted and the phrase, "storing computer instructions executable by the processor" should be inserted in its place. In addition, claim 18 contains the phrase, "the computer instructions comprising

instructions." The claim element "computer instructions" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,725,731 to Wiklund et al.

As to claim 1, Wiklund et al. disclose a device for pressure sensing and control comprising a sensor portion operable to sense a pressure (differential pressure sensor, Fig. 6 and col. 5 lines 41-44) a control portion (processing electronics 50, Fig. 6 and col. 5 lines 49-51) operable to compare the sensed pressure to a set point (differential pressure col. 5, line 62) generate a control signal based on a difference between the sensed pressure and the set point (col. 5, lines 60-65) and output the control signal (col. 5, lines 60-65) and wherein the sensor portion and control portion are integrated in a housing (Fig. 6 and col. 6, lines 37-39).

As to claim 2, Wiklund et al. further disclose that the sensor portion further comprises a diaphragm capacitance sensor (col. 4, line 12).

As to claim 7, Wiklund et al. further disclose that the housing is configured to be coupled to a process chamber (sensor 22 and processing electronics 50 integrated in member 20 coupled to pipe 12, Fig. 9).

Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (AAPA).

As to claim 18, AAPA discloses a gauge with integrated pressure control comprising a pressure sensor to output a sensed pressure (paragraph 4) a processor coupled to the pressure sensor (paragraph 4) a memory accessible by the processor storing instructions executable by the processor (paragraph 4) the computer instructions executable to receive the sensed pressure (paragraph 4) compare the sensed pressure to a set point (paragraph 4) and generate a control signal based on a difference between the sensed pressure and the set point (paragraph 4).

As to claim 20, AAPA further discloses that the gauge is operable to output the control signal to a valve drive (paragraph 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Pat. No. 6,725,731 to Wiklund et al.

As to claim 1, AAPA discloses a device for pressure sensing and control comprising a sensor portion (24, Fig. 1) operable to sense a pressure (paragraph 3) a control portion (26, Fig.

1) operable to compare the sensed pressure to a set point (36, Fig. 1 and paragraph 3) generate a control signal (38, Fig. 1) based on a difference between the sensed pressure and the set point (paragraph 4) and output the control signal (paragraph 4). AAPA fails, however, to disclose that the sensor portion and the control portion are integrated in a housing.

Wiklund et al. disclose a sensor portion and a control portion integrated in a housing (sensor 22 and processing electronics 50 integrated in member 20, Fig. 9).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA by integrating the sensor portion and the control portion in a housing as taught by Wiklund et al. in order to eliminate pressure signal attenuation and delays associated with long lines connecting the sensor and the control portions (Wiklund et al., col. 1, lines 43-45).

As to claim 2, Wiklund et al. further disclose that the sensor portion comprises a diaphragm capacitance sensor (col. 4, line 12).

As to claim 3, Wiklund et al. further disclose that the control portion comprises an analog to digital converter (col. 4, line 63) and a digital signal processor (microprocessor, col. 4 line 64). Wiklund et al. fail, however, to disclose that the control portion comprises a memory accessible by the digital signal processor storing software instructions executable by the digital signal processor.

AAPA further discloses that the control portion comprises a memory accessible by the digital signal processor storing software instructions executable by the digital signal processor (paragraph 4).

As to claim 4, Wiklund et al. further disclose that the sensor portion is operable to output an analog sensed pressure signal (col. 4, lines 64-65) the analog to digital converter is operable to receive the analog sensed pressure signal and convert the analog sensed pressure signal to a digital sensed pressure signal (col. 4 lines 64-65). Wiklund et al. fail, however, to disclose that the software instructions comprise instructions executable by the digital signal processor to receive the digital sensed pressure signal, compare the sensed pressure signal to the set point and generate a digital valve control signal.

AAPA further discloses that the software instructions comprise instructions executable by the digital signal processor to receive the digital sensed pressure signal (paragraph 4) compare the sensed pressure signal to the set point (paragraph 4) and generate a digital valve control signal (paragraph 4).

As to claim 5, AAPA and Wiklund et al. fail to disclose that the analog to digital converter is further operable to convert the digital control signal to an analog control signal.

It would have been obvious, however, to one of ordinary skill in the art to use the analog to digital converter of Wiklund et al. to convert the digital control signal to an analog control signal in order to facilitate communication of the control signal to a less costly conventional analog valve.

As to claim 7, Wiklund et al. further disclose that the housing is configured to be coupled to a process chamber (sensor 22 and processing electronics 50 integrated in member 20 coupled to pipe 12, Fig. 9).

As to claim 10, AAPA discloses a system for pressure control comprising a process chamber (paragraph 3) a valve in fluid communication with the process chamber (paragraph 3) a

valve drive responsive to a control signal to open and close the valve (paragraph 3) a gauge with integrated pressure control coupled to the process chamber comprising a sensor portion at least partially exposed to a fluid in the process chamber operable to sense a pressure in the process chamber (paragraph 3) a control portion operable to compare the sensed pressure to a set point (paragraph 3) generate the control signal based on a difference between the sensed pressure (paragraph 3) and the set point and output the control signal (paragraph 3). AAPA fails, however, to disclose that the sensor portion and the control portion are integrated in a housing.

Wiklund et al. disclose a sensor portion and a control portion integrated in a housing (sensor 22 and processing electronics 50 integrated in member 20, Fig. 9).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA by integrating the sensor portion and the control portion in a housing as taught by Wiklund et al. in order to eliminate pressure signal attenuation and delays associated with long lines connecting the sensor and the control portions (Wiklund et al., col. 1, lines 43-45).

As to claim 11, Wiklund et al. further disclose that the sensor portion further comprises one of a diaphragm capacitance gauge (col. 4, line 12).

As to claim 12, Wiklund et al. further disclose that the control portion comprises an analog to digital converter (col. 4, line 63) and a digital signal processor (microprocessor, col. 4 line 64). Wiklund et al. fail, however, to disclose that the control portion comprises a memory accessible by the digital signal processor storing software instructions executable by the digital signal processor.

AAPA further discloses that the control portion comprises a memory accessible by the digital signal processor storing software instructions executable by the digital signal processor (paragraph 4).

As to claim 13, Wiklund et al. further disclose that the sensor portion is operable to output an analog sensed pressure signal (col. 4, lines 64-65) the analog to digital converter is operable to receive the analog sensed pressure signal and convert the analog sensed pressure signal to a digital sensed pressure signal (col. 4 lines 64-65). Wiklund et al. fail, however, to disclose that the software instructions comprise instructions executable by the digital signal processor to receive the digital sensed pressure signal, compare the sensed pressure signal to the set point and generate a digital control signal.

AAPA further discloses that the software instructions comprise instructions executable by the digital signal processor to receive the digital sensed pressure signal (paragraph 4) compare the sensed pressure signal to the set point (paragraph 4) and generate a digital control signal (paragraph 4).

As to claim 14, AAPA further discloses that the control portion is further operable to communicate the digital control signal to the valve drive (paragraph 3).

As to claim 15, AAPA and Wiklund et al. fail to disclose that the analog to digital converter is further operable to convert the digital control signal to an analog control signal.

It would have been obvious, however, to one of ordinary skill in the art to use the analog to digital converter of Wiklund et al. to convert the digital control signal to an analog control signal in order to facilitate communication of the control signal to a less costly conventional analog valve.

Claims 6, 8, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art and U.S. Pat. No. 6,725,731 to Wiklund et al. as applied to claims 1, 10 and 19 in view of U.S. Pat. No. 6,915,203 to Maegawa et al.

As to claim 6, AAPA and Wiklund et al. fail to disclose that the software instructions further comprise instructions executable to perform self diagnosis.

Maegawa et al. disclose software instructions executable to perform self diagnosis (paragraph 9).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA integrated in the housing of Wiklund et al. by adding the self diagnosis function of Maegawa et al. in order to allow detection of sensor failure, as well as to identify the failed component to facilitate rapid repair or replacement, decreasing process down-time.

As to claim 8, AAPA further discloses that the sensor portion is configured to be partially disposed to a process gas in the process chamber when the housing is coupled to the process chamber (paragraph 4, and Fig. 1).

As to claim 16, AAPA and Wiklund et al. fail to disclose that the software instructions further comprise instructions executable to perform self diagnosis of the device.

Maegawa et al. disclose software instructions executable to perform self diagnosis of a device (paragraph 9).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA integrated in the housing of Wiklund et al. by adding the device self diagnosis function of Maegawa et al. in order to allow the detection of sensor failure,

as well as to identify the failed component to facilitate rapid repair or replacement, decreasing process down-time.

As to claim 19, AAPA fails to disclose that the computer instructions further comprise instructions executable to perform diagnosis of the gauge.

Maegawa et al. disclose software instructions executable to perform diagnosis of a gauge (paragraph 9).

It would have been obvious to one of ordinary skill in the art to modify the gauge of AAPA by adding the device self diagnosis function of Maegawa et al. in order to allow the detection of gauge failure, as well as to identify the failed component to facilitate rapid repair or replacement, decreasing process down-time.

Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) and U.S. Pat. No. 6,725,731 to Wiklund et al as applied to claims 1 and 18 in view of U.S. Pat. No. 6,829,936 to Lehmann.

As to claim 9, AAPA and Wiklund et al. fail to disclose that the sensor portion can comprise one of a pirani gauge, a thermocouple gauge, a cold cathode gauge or a hot cathode gauge.

Lehmann discloses that a sensor portion can comprise a pirani gauge (paragraph 3).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA integrated in the housing of Wiklund et al. by including the pirani sensor of Lehmann to allow for miniaturization of the sensor portion, lower operating temperatures and faster response times.

As to claim 17, AAPA fails to disclose that the sensor portion can comprise one of a pirani gauge, a thermocouple gauge, a cold cathode gauge or a hot cathode gauge.

Lehmann discloses that a sensor portion can comprise a pirani gauge (paragraph 3).

It would have been obvious to one of ordinary skill in the art to modify the pressure sensing and control device of AAPA integrated in the housing of Wiklund et al. by including the pirani sensor of Lehmann to allow for miniaturization of the sensor portion, lower operating temperatures and faster response times

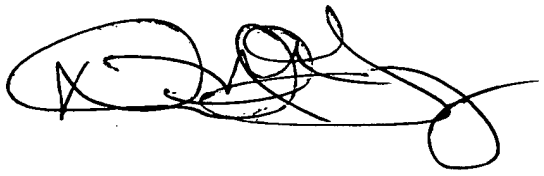
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. Nos. 6,817,252 and 6,671,584 and Published U.S. Application Nos. 2005/0149131; 2005/0061079 and 2003/0202874 disclose various pressure sensors and process control systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George P. Bonanto whose telephone number is (571) 272-2182. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David M. Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Gray
Primary Examiner

GPB